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1. Subsequent paragraphs give some brief information about miscellaneous departments and laboratories of the Central Scientific Research Institute of Technology and Engineering (TsNIITMash) at Moscow.

Department of Pressure Treatment of Metals (OOMD)

2. Following are the names of some of the personnel working in this department:

V.N. Batagov, Cand. of Tech. Sc.
I.I. Girsh, Cand. of Tech. Sc.
S.S. Lifshits, Cand. of Tech. Sc.
L.V. Prozorov, Cand. of Tech. Sc.
V.F. Shcheglov, Cand. of Tech. Sc.
L.A. Shofman, Cand. of Tech. Sc.
E.P. Unksov, Cand. of Tech. Sc.

L.I. Berliner, Engineer
V.N. Martynov, Engineer
S.M. Sergeyev, Engineer
N.A. Zhilin, Engineer

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3. The problems which are being studied by OOMD mainly concern three basic groups of forge and press equipment: namely crank-operated machines, power hammers, and hydraulic presses.

4. During the past few years tests have been made of steam hydraulic presses intended for pressures of 600 to 10,000 tons. Steam pressure in the cylinders of intensifiers (multiplikator) and water pressure in the working cylinders were determined. The travel and speed of press plungers and the opening of

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valves during travel were recorded.

5. Steel used in the making of coupling rods for steam-driven pneumatic hammers (parovozdushny molot) and for drop hammers was examined and tested in a new way.

6. Stresses developed during the process of stamping were investigated with the aid of inertia-free (bezinertsionny) measuring appliances.

7. Types of lubricants used for drawing out (vytyazhka) of low-carbon and other steels during cold stamping were evolved.

8. A hammer of special design, without an anvil block, was constructed in accordance with Shcheglov's plans. The upper block (baba) of this hammer, together with pistons, weighs 230 kg. The lower block weighs 690 kg. It has big advantages compared with other hammers, owing to its small size and light bed.

Department of Cold Treatment of Metals

9. Following are the names of some of the scientific personnel working in this department:

S.B. Futoryan, Cand. of Tech. Sc.
A.I. Isayev, Cand. of Tech. Sc.
N.A. Lapin, Cand. of Tech. Sc.
N.N. Zorev, Cand. of Tech. Sc.

V.Yua. Katsnelson, Engineer
I.F. Klovov, Engineer
N.P. Zotov, Engineer

10. The department works out problems of cold treatment of special steels, cast iron, and other metals.

11. A team of engineers headed by N.N. Zorev worked for six months at the Stalin Metal Works in Leningrad, instructing works personnel in the acquisition of methods used for cold treatment of components made of stainless and other special steels.

Department of Reduction Gear Construction

12. Following are the names of some of the scientific personnel working in this department:

B.A. Taits, Cand. of Tech. Sc.

Kh. L. Bolotin, Engineer
Ya. G. Kistyan, Engineer
M.S. Polotsky, Engineer
B.A. Pronin, Engineer

13. The department has published handbooks dealing with gear transmissions and a manual of reduction gear construction.

Metal-Ceramic Laboratory (Metallokeramicheskaya Laboratoriya)

14. Investigations in the field of metal-ceramic metallurgy, otherwise known as powder metallurgy, were carried out in TsNIITMash by M.Yu. Balshin together with some other engineers. The study of powder metallurgy began before the war and is still being pursued. Many experiments were made in the laboratory. Various instruments and appliances such as screens, special press moulds, machines for pulverizing metal, etc, were designed. Some valuable, practical

results were obtained during the war. It was found, for instance, that shell fuses (serdechniki snaryadov) produced by the metal-ceramic method possessed better armor-piercing properties and improved the ballistic properties of the shells. At the present time bearings, gear-wheels, and other articles are being produced in this way.

15. In 1944 TsNIITMash published a comprehensive manual of powder metallurgy.

16. Following are the names of some of those who took part in the above-mentioned activities:

V.F. Kopytov, engineer, worked in the Furnace Laboratory on sintering of metallic powders.

S.Ya. Sigolayev, engineer, together with N.I. Yeremin designed the AES-3 magnetic detector of defects.

P.V. Sorokin, engineer.

N.I. Yeremin, Cand. of Physio-math. Sc., a specialist in physio-chemical methods of studying metals, and in magnetic detection of defects in powders (magnitnaya poroshkovaya defektoskopiya).

Department of Machines and Mechanisms

17. Machines and appliances of many different kinds were evolved in this department. Following are some of them:

a. stepless transmission with friction changes was worked out by V.A. Svetozarov, and adapted by him to the practical needs of various branches of industry.

b. a device for compressionless atomization of viscous liquids, for use in the building industry.

c. a turbine transformer for the petroleum industry for transmitting power from engine to drill and winch when sinking oil wells. Continuous variation of power is required and, as the engine used is generally a Diesel or an electric motor, this creates difficulties. TsNIITMash's turbine transformer eliminates them. The speed of drilling has been almost doubled.

d. a gas turbine of original design, very economical in working.

Furnace Department

18. Following are some of the problems worked on in this department:

a. A.V. Kuroyedov studied problems of muffle furnaces for annealing metals.

b. V.F. Kopytov investigated the construction of furnaces and worked on the problem of annealing steel in furnaces without oxidation.

c. N.V. Sokolov worked on problems of the time needed to anneal forging blanks in furnaces.

d. Problems of the rational utilization of different kinds of fuel and of automatic heat regulation in annealing furnaces were also studied.

Metallographic Laboratory

19. New brands of steel of great durability are being evolved, as well as a

new technique for producing cast iron with a tensile strength of at least 50 kg per sq millimeter.

TsNIITMash Aid to Industry

20. Although TsNIITMash principally serves the needs of heavy engineering works, it also helps a large number of works belonging to various other industries, about 800 works in all.

Comment: The general organization and activities of the Central Scientific Research Institute of Technology and Engineering (TsNIITMash), of which the departments and laboratories described in this report form a part, of the institute 50X1-HUM 50X1-HUM